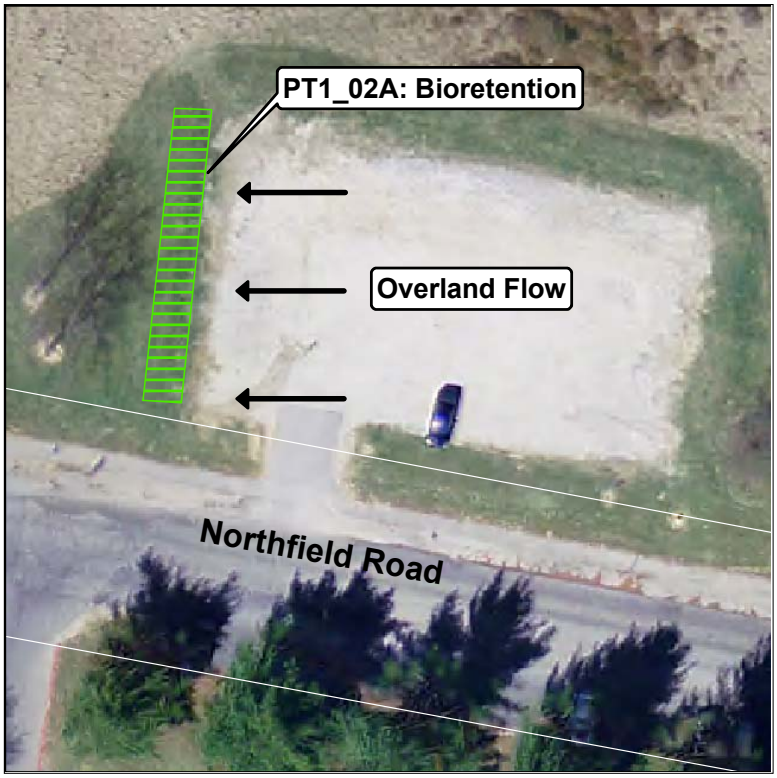
Proposed Project

Project Number: PT1_02A
Subwatershed: Plumtree Branch 1

Project Type: Bioretention
Project Size: 78 SY
Drainage Area: 0.69 acres/0.20 acres impervious

Project Location: Off of Northfield Road at Dunloggin Middle and Northfield Elementary Schools.



Project Description: The project is a bioretention site design to improve the quality of the discharge from the adjacent recently-paved parking lot. The project concept includes use of bioretention to capture flow from the schools' visitor parking lot. The soils at this site are a mix of urban hydrologic type D soils with a low ability to infiltrate water and more permeable B and C type soils. A percolation test at the location of the bioretention site to determine the soils ability to dissipate water would need to be completed to determine whether an underdrain is necessary. Student and volunteer involvement may be used to reduce costs associated with planting and maintenance.

Project Benefits:

Water Quality	Water quality will be improved from filtration and nutrient uptake.
Education	The project's proximity to two schools could provide educational benefits.

Project Constraints:

Environmental	No environmental constraints or permitting issues are anticipated.
Property Ownership	The location of the project lies within the boundaries of Dunloggin Park (a Howard County park).
Facility Access	Access to the site is excellent by parking areas.
Design / Construction	The infiltration rate should be tested to determine whether an underdrain is needed.

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Cost Detail:

ITEM	QTY	UNITS	UNIT COST	TOTAL
Green Technology				
Dry Swale w/ underdrain		SY	$70.00	$0
Dry Swale w/o underdrain		SY	$25.00	$0
Subsurface Infiltration (Trench)		SY	$85.00	$0
Filter Strip		AC	$4,000.00	$0
Bioswale w/ underdrain		SY	$85.00	$0
Bioswale w/o underdrain		SY	$35.00	$0
Bioretention	78	SY	$120.00	$9,360
			Direct Construction Subtotal	$9,360
Indirect Costs				
E/SC, MOT, MOS (10% of Directs, minimium $2,000 maximum $15,000)	1	LS	$2,000.00	$2,000
Construction Stakeout ($1,000/Day)	2	Days	$2,000.00	$2,000
			Base Construction Cost	$13,360
			Mobilization (10% of Directs or $1,000)	$1,000
			Subtotal	$14,360
			Contingency (30%)	$4,308
			Construction Subtotal	$18,668
			Envt'l Studies / Permitting (5% of Construction or $5,000, where necessary)	$0
			Engineering and Surveys (25% of Construction or $30,000, maximum $40,000)	$30,000
			Total Capital Cost	**$48,668**
Operations and Maintenance Costs				
Annual Maintenance	6	Percent	$562	
Discount Rate	5	Percent		
Expected Life	20	Years		
			Net Present Value of O&M Costs	$6,999
			Life Cycle Cost	**$55,700**